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MEDIEVAL RECKONINGS OF TIME

HELPS FOR STUDENTS OF HISTORY. No. 3.

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MEDIEVAL RECKONINGS OF TIME

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CONTENTS

ELEMENTS	-	-	-	-	-	-	PAGE 7
I.							
DAYS	-	-	-	-	-	-	11
HOLY DAYS	-	-	-	-	-	-	12
THE DAYS OF THE WEEK	-	-	-	-	-	-	17
RULE TO FIND THE DAY OF THE WEEK	-	-	-	-	-	-	19
II.							
MONTHS	-	-	-	-	-	-	21
THE DAYS OF THE MONTH	-	-	-	-	-	-	23
SEASONS	-	-	-	-	-	-	25
III.							
YEARS	-	-	-	-	-	-	27
CYCLES OF YEARS	-	-	-	-	-	-	29
EASTER TABLES	-	-	-	-	-	-	32
ERAS	-	-	-	-	-	-	36
THE CHRISTIAN YEAR	-	-	-	-	-	-	39
THE BEGINNING OF THE YEAR	-	-	-	-	-	-	41

MEDIEVAL RECKONINGS OF TIME

ELEMENTS

IN the following sketch an attempt is made to describe in the simplest terms the way in which time was reckoned in the Middle Ages. Accordingly we have only to do with the Julian Calendar, or Old Style, and are not concerned with the reformed Calendar, or New Style, which was introduced by Pope Gregory XIII. in 1582. We are also under the domination of the Ptolemaic system, which supposes that the Sun and the planets revolve round the Earth; and this belief is so deeply embedded in language that it is natural to use forms of statement which assume it. Again, when we speak of the Day and the Year, we mean the periods known by common observation, and not other periods arrived at by the calculation of astronomers. Nor do we aim at precision in our

8 MEDIEVAL RECKONINGS OF TIME

figures: for our purpose the Solar Year consists of $365\frac{1}{4}$ days, not of 365 days 5 hours 48 minutes 46 seconds.

In an outline like the present it has been judged most practical to exclude the discussion of Oriental or Byzantine chronology; still less do we propose to say anything about the system, based upon the Lunar Year, which prevailed and still prevails among Saracens.

Fuller information will be found in:

- Ducange, "Glossarium mediæ et infimæ Latinitatis," ed. G. A. L. Henschel, 7 volumes, 1840-1850 (under *Annus*, *Mensis*, etc.).
- "Art de Vérifier les Dates," ed. Saint-Allais, Part II., Vols. I., II., 1818.
- H. Grotefend, "Zeitrechnung des Deutschen Mittelalters und der Neuzeit," Vol. I., 1891; and Vol. II., Part II., 1898.
- A. Giry, "Manuel de Diplomatique," Book II., 1894.
- F. Rühl, "Chronologie des Mittelalters und der Neuzeit," 1897.
- F. K. Ginzel, "Handbuch der mathematischen und technischen Chronologie," Vol. III., 1914.

For common use the following handbooks may be mentioned:

- Sir Harris Nicolas, "The Chronology of History," 1883; new edition, 1840.
- Augustus De Morgan, "The Book of Almanacs," 1851; 3rd edition, 1907.
- J. J. Bond, "Handy-Book of Rules and Tables for verifying Dates with the Christian Era," 1875; 4th edition, 1889.
- H. Grotefend, "Taschenbuch der Zeitrechnung," 1898.
- E. A. Fry, "Almanacks for Students of English History," 1915.

Time has always been reckoned by the movements of the Earth, the Sun, and the Moon. The Earth rotates upon its axis in a Day, which we divide into 24 hours. The Sun was deemed to revolve round the Earth in $365\frac{1}{4}$ days: this we call a Solar Year of 365 days, and provide for the odd quarter by intercalating a day in the February of every fourth year (Leap Year). The year is divided for convenience into twelve Months.

Another fact which has always been brought prominently before men's minds, especially in times when husbandry was their principal occupation, is that the Moon revolves round the Earth in about $29\frac{1}{2}$ days. It was obviously impossible to combine this Lunar Month even approximately with the number of days in the Solar Year, and infinite ingenuity was exercised in order to harmonize the discordant elements. The four quarters or Phases of the Moon were very roughly represented by the Week of seven days. This was derived in ancient times from the East, and was firmly established in the Calendar through the observances of the Christian Church. It is an independent form of reckoning which stands in no exact relation to the Month or Year, whether Solar or Lunar. The days of the Week go on continuously without regard to the larger units.

10 MEDIEVAL RECKONINGS OF TIME

Hence, if a complete chronological scheme was to be constructed, there was a third element to be taken into account; and to bring the movements of the Sun and the Moon into agreement with the days of the Week introduced a further problem, which was of paramount importance in the Middle Ages, because on its solution depended the date of Easter. To this we shall return at a later stage.

I DAYS

THE Day was divided into two periods, each of twelve hours, beginning respectively at sunset and sunrise. Hence in the different seasons the hours varied greatly in length. At midwinter an hour in the daytime was reduced to 40 minutes, and an hour at night extended to 80 minutes. But the division into 24 hours of equal length was not unknown; we may find it noted in calendars, but it does not seem to have been used in practice. Down to the fourteenth century the length of the hours changed with the seasons, and these unequal hours were numbered from sunset and sunrise. It was the placing of clocks with bells in churches and other public buildings that gradually established a system of uniform hours. We still mark its origin when we speak of the hour of the clock, "o'clock." These hours were generally numbered from 1 to 12, in two series, beginning at midnight and noon respectively. But in Italy and Germany the numbering from 1 to 24 was long retained. In

some places, particularly in Italy, though the hours were made equal, the clocks were so far adapted to the local custom that the beginning of the day (24 o'clock) was altered from season to season, and was fixed at or soon after sunset. In Italy this practice was not given up until the opening of the nineteenth century.

The hours of Church service followed the system of variable hours: Mattins before dawn, Prime at sunrise, Tierce at 3, Sext at 6, Nones at 9, Vespers or Evensong at 11, reckoned from sunrise, and Compline after sunset. But in course of time Nones were set back to midday, whence we call it "noon." It should be noted that in ecclesiastical use the day begins with Evensong of the preceding day

HOLY DAYS

Holy Days occur either on fixed days of the month or on days determined by the varying date of Easter. We speak, therefore, of Fixed and Moveable Feasts, and use the term Feast (as it is used in the Prayer-Book) to denote any day of special religious observance, whether it is a Feast or Fast.

Fixed Feasts are those commonly known as

Saints' Days. They are the commemorations found in the Roman calendar, increased as time went on by feasts observed either generally or in particular countries or in particular localities. The day, unless specially distinguished, as the Nativity of St. John Baptist or the Conversion of St. Paul, is understood to be that of the Saint's burial (*depositio*). But it sometimes happened that the Saint's body was removed to a different place, and this Translation commonly took place at a time of year suitable for a great popular commemoration. For example, the Feast of St. Martin was November 11 (S. Martin *in hieme*), but his Translation on July 4. The Martyrdom of St. Thomas was on December 29, but his Translation on July 7. It should be noticed that all Feasts were not everywhere kept on the same day, and in cases of doubt it is necessary to consult a book of reference. Sometimes also there is a risk of confusion through the Saint's title being omitted: thus St. Stephen the Martyr is commemorated on December 26, but St. Stephen the Pope on August 2. In England the neighbouring Feasts of St. Edmund the Archbishop on November 16 and of St. Edmund King and Martyr on November 20 are not always properly distinguished.

Moveable Feasts may vary, according to the

date of Easter, as much as five weeks; for Easter may fall on any Sunday between March 22 and April 25 inclusive. The earliest of these Feasts is Septuagesima Sunday, which may occur as early as January 18, though it has so occurred less than once in a century. The period during which this disturbance lasts continues strictly until the Sunday next but one before Advent—that is, until late in November. But in practice it formerly ended at Whitsunday, for the usage of numbering the Sundays between that Feast and Advent was only introduced by degrees. The Sunday after Whitsunday was kept, perhaps first in England, as the Feast of the Holy Trinity at least from the eleventh century, and the Thursday following was established by Urban IV. in the thirteenth as the Feast of Corpus Christi. When the Sundays came to be numbered, they were counted, as they still are in the Roman use, after Whitsunday; but in England the practice of reckoning them from Trinity prevailed. In other parts of the year, too, it was common to speak of Sundays not by their place in the Church year, but with the opening word of the Introit in the Mass for the day. Some of these designations are particularly often used, and indeed hold their ground in countries of the Lutheran confession down to the present day:

Septuagesima		<i>Circumdederunt</i>
Sexagesima		<i>Earsurge, Domine</i>
Quinquagesima		<i>Esto mihi</i>
First Sunday in Lent	<i>Invocavit</i>
Second Sunday in Lent	<i>Reminiscere</i>
Third Sunday in Lent	<i>Oculi</i>
Fourth Sunday in Lent	<i>Lætare, Jerusalem</i>
First Sunday after Easter		<i>Quasi modo geniti</i>
Second Sunday after Easter		<i>Misericordia Domini</i>
Third Sunday after Easter		<i>Jubilæte</i>
Fourth Sunday after Easter		<i>Cantate</i>
Fifth Sunday after Easter		<i>Vocem jocunditatis</i>

The chief Feasts had a subsidiary observance a week later: this was called the Octave, in English the Utas. It was very commonly used in summonses to councils, parliaments, and the like, as a convenient date for attendance when the great festival was over. For this purpose also the Quindene or Quinzaine, a fortnight after the Feast, was sometimes appointed.

It was not usual until about the thirteenth century to date letters or other documents by the Holy Days, but chroniclers constantly recorded events as occurring on particular festivals. They were also found convenient for specifying the dates on which rents should be paid; the festival served as the most practical reminder of the obligation at a time when almanacks were not in popular use. Hence we constantly read in charters of the grant of land or of a house subject to the payment of a

16 MEDIEVAL RECKONINGS OF TIME

definite rent, not merely at the four customary quarter-days (all of which were feasts), but also, for example, twice a year on the feasts of the Conversion of St. Paul and of St. James, January 25 and July 25. This arrangement was the easier to make, since in six months of the year a great feast fell on the 8th of the Kalends, and in two others on the 7th or 9th. One date which was very often used in England as a term for paying rent or collecting dues was, unlike those which have been mentioned, connected with a moveable feast. This was Hock Day or Hoke Day, on the Tuesday after the Octave of Easter. Hocktide included that day and the Monday preceding it. It was taken as a convenient time for spring payments, when the autumn payments were at Michaelmas; just as the Exchequer opened its two annual sessions on Hock Monday and on the morrow of Michaelmas.

THE DAYS OF THE WEEK

The days of the week were named from the seven heavenly bodies known to the ancients: the Sun, Moon, Mars, Mercury, Jupiter, Venus, and Saturn. English and Dutch are almost the only languages in which all the seven are still used, the classical names of deities being rendered by their presumed equivalents in Teutonic mythology. Everywhere else one or more of them has been superseded. The Sabbath came in first (this is the only change found regularly in German); then the Lord's Day took the place of the *dies solis*. Thus we get the series of names as they stand in Latin, French, Italian, and Spanish. The first day of the week was *dominica* or *dies dominicus*; the last, *sabbatum* or *dies sabbati*. The Sabbath in the Middle Ages was never any day but Saturday; its occasional transference to Sunday rested on a theory not earlier than the Reformation, and to call Saturday *dies Saturni* is a modern artificial revival.

A day of the week was known as a *feria*, and the *feriæ* were numbered from 1 to 7; but *feria prima* for Sunday and *feria septima* for Saturday were hardly ever used. Hence the days of the week might be designated, as they still are in the Roman Church

18 MEDIEVAL RECKONINGS OF TIME

Calendar, *dies dominicus*, *feria secunda*, *feria tertia*, *feria quarta*, *feria quinta*, *feria sexta*, *sabbatum*. These names are preserved in a translated form in Portuguese down to the present time.

The numbers of the days in each week were marked in calendars throughout the year by the letters of the alphabet from A to G. These are the Ferial or Day Letters, the letter of January 1 being A. Every day in the year has its letter, and when we know the day of the week of January 1, we can reckon from it to any other day. For instance, if A, January 1, is Sunday, then February 1, D, is Wednesday. This method, we shall see, was used in order to find the week day of the 1st of every month. But the Day Letters are chiefly employed for a different purpose—namely, to note the place occupied by Sunday in the first week of the year. If A, the first day, is Friday, then the Dominical or Sunday Letter, as it is called, is C; if the first day is Saturday, the Sunday Letter is B. Consequently, while the Day Letters run forward from A to G, the Sunday Letters go backwards in successive years in the order A, G, F, E, D, C, B. A Leap Year has two Sunday Letters, one (*e.g.*, F) down to February 24, the second (*e.g.*, E) for the rest of the year.

A peculiarly complicated method of indicating

each day of the year is that known as the *Cisiojanus*. This is a series of twenty-four hexameters of execrable Latinity, made up chiefly from fragments of the names for the Holy Days. There are various forms of it, one of which begins, for the month of January:

*Cisio Janus Epi sibi vendicat Oc Feli Mar An,
Prisca Fab Ag Vincen Ti Pau Po nobile lumen.*

Each syllable denotes a day, and, as the same syllable occurs in more than one month, it is necessary to quote several syllables or else to mention the month as well as the syllable. Happily this barbarous invention, though common in Germany, is hardly ever found in England except as an adjunct to calendars.

RULE TO FIND THE DAY OF THE WEEK

The day of the week on which any historical event occurred can easily be ascertained from the tables given in the books named on page 8. But it is a good thing to have a simple formula which will bring out the required result during the period of the Julian Calendar without the need of consulting books. For this purpose a most practical formula was devised by Father Chambeau, S.J., in 1892.* We add together five numbers and divide

* See "Bibliothèque de l'École des Chartes," liv. 595.

20 MEDIEVAL RECKONINGS OF TIME

the sum by 7: the remainder gives the day of the week, 1 being Sunday, 2 Monday, and so on. The numbers are as follows:

1. The Day of the month.
2. The Month number—*i.e.*, the ferial letter giving the weekday of the 1st of the month: 1, 4, 4, 0, 2, 5, 0, 3, 6, 1, 4, 6, as printed below, p. 22, but with 0 in place of 7.
3. The Year in the Century.
4. A quarter of this, omitting fractions.
5. The Hundred number, which is 18 minus the number of the hundreds (not centuries, because we begin with 0, not with 1).

The formula then is: The day of the week is the remainder of

$$\frac{d + m + y + \frac{y}{4} + (18 - h)}{7}$$

The operation may be simplified by casting out sevens at every stage. Thus, Thomas Becket was consecrated on June 3, 1162.

3	<i>or</i>	3
5		5
62		6
15		1
7		0
7) 92		7) 15
13 · 1 = Sunday.		2 1 = Sunday.

II MONTHS

THE Solar Year is arbitrarily divided into twelve Months. Our system of months is derived from a year which began on the 1st of March, as is shown by their names from September to December. In the calendar as revised by Julius Cæsar the months were given alternately 31 and 30 days (except that in two cases two months of 31 days succeeded one another), and the last month, February, was left defective by two days. The beginning of the Year was fixed in January, but the names of the months indicating a different commencement were not altered, except that Quintilis was shortly afterwards changed to Julius and Sextilis to Augustus.

As every month, excepting February, was two or three days in excess of four weeks, a series of twelve numbers was arranged to show the weekday of each; 1 being Sunday, 2 Monday, and so on. These numbers were:

22 MEDIEVAL RECKONINGS OF TIME

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2	5	5	1	3	6	1	4	7	2	5	7

These were employed to assist the computation of Easter, and were called the Solar Regulars. But in practice it is convenient to reduce these figures by 1, so as to make the numbers agree with the Ferial Letters, and 1=A the first day of the year; 7 and 0 are of course for this purpose exchangeable. We take, therefore, the following series:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4	4	7	2	5	7	3	6	1	4	6

These were remembered by means of verses. Thus in the thirteenth century,

Altitonans Dominus Divina Gerens Bonus Extat:
Gratuito Celi Fert Aurea Dona Fideli.

or,

Alta Domat Dominus; Gratis Beat Equa Gerentes:
Contemnit Fictos, Augebit Dona Fideli.

In English we have an old piece of doggerel:

At Dover Dwell George Brown Esquire,
Good Christopher Finch, And David Friar.

In Leap Year the numbers for the time from January 1 to February 24 have to be diminished by one.

THE DAYS OF THE MONTH

The old Roman way of reckoning the days from three fixed points in the month never fell altogether out of use. This system counted backwards from the Kalends or 1st of the following month, the Ides on the 13th of the month, and the Nones on the 5th, including both the extreme days in the calculation. In March, May, July, and October the Nones and Ides were placed two days later. In Leap Year the leap occurred after the 24th of February: the intercalated day, *bissextum* or *dies bissextus*, was inserted before the 6th of the Kalends of March, which in common years was 24th of February. Hence in Leap Year any observance belonging to the 24th of February was kept on the 25th. This happened in regard to the Feast of St. Matthias. Mistakes sometimes arose through the scribe, from familiarity with the modern way of counting the days of the month, naming the Kalends of the current month instead of those of the following month. A date before the Kalends of January might even be understood as falling in a wrong year. For instance, the death of William Longsword, Duke of Normandy, was recorded as taking place *anno ab incarnatione*

Domini DCCCCXLIII, XVI Kalendas Januarii.

This statement was supposed by the annalist Flodoard of Rheims to refer to the year 943, but in fact it means the 16th day before January 1, 943.

The modern way of counting the days straight on from the 1st to the last day of the month came to us from Syria and Egypt; but in the West it is hardly found before the second half of the sixth century. The practical instinct of Pope Gregory the Great led him to introduce it into his chancery, but his successors went back to the older style. The modern plan, however, won more and more acceptance among the Lombards and Franks, and when people wrote in the vernacular it was regularly employed. It is worth noting, on the other hand, that the revival of learning under Charles the Great led to an official reversion to the classical system, which long held its ground in the Imperial chancery.

A peculiar method of reckoning the days of the month is known as the Custom of Bologna (*consuetudo Bononiensis*). This counted the days forwards from 1 to 16 (or 15 in months of thirty days), and backwards from the last day in the second half of the month. The day in the one case was noted as *intrante mense*, in the other as *exeunte* or *stante mense*. The origin of this system is not

clear, but it is unconnected with the old Roman method, because that reckoned back, not from the last day of the month, but from the 1st of the following month. The *consuetudo Bononiensis* was not often used outside Italy, except when Italian notaries were employed in the Imperial chancery; but from the twelfth century it is occasionally found in France, probably as a consequence of the ascendancy of the law school of Bologna, which was frequented by men who intended to enter the profession of notaries. That it did not pass into England so early is explained by the fact that it was not until a later time that notaries were employed here; but from the fourteenth century we may find it in English documents drawn up by Papal notaries. The Bologna reckoning survived on the Continent as late as the fifteenth century, but before that date it was generally passing out of fashion.

SEASONS

The year was popularly divided into four Seasons, the middle of each of which was fixed at the time of the Equinoxes and Solstices. The dates at which they began are variously stated. Strictly, of course, they should be placed as nearly as possible halfway between the Equinox and the

26 MEDIEVAL RECKONINGS OF TIME

Solstice; and so Bede made Spring begin on February 7, Summer on May 9, Autumn on August 7, and Winter on November 7—that is, in every case on the 7th of the Ides of the month. But he noticed also that Isidore of Seville put the dates more than a fortnight later: on February 22, May 24, August 23, and November 23.* In medieval calendars both dates are sometimes entered; but in time the Isidorian system prevailed, though two of the dates were shifted one day. Hence, at least in the later Middle Ages, the seasons were taken as beginning on the Feasts of St. Peter in Cathedra (February 22), St. Urban (May 25), St. Bartholomew (August 24), and St. Clement (November 23).

* “De Temporum Ratione,” xxxiii.

III YEARS

A YEAR may be indicated by its place in the current reign, or in a Cycle or repeating series of years, or in a series counted from a definite date or Era. It should be premised that the ancient eras, such as the Year of the World (which was diversely computed), the Olympiad, the Year of Rome, and the Seleucid Era, may be here left out of account, though they are occasionally recorded in chronological tables. For practical purposes we may limit ourselves to the three modes of dating mentioned above.

Under the Roman Empire the year was marked by the names of the Consuls, and as their office was annual their names supplied a precise date. But no Consuls were appointed after A.D. 534 in the West and 541 in the East, and the years following were styled *post consulatum Paulini* in the West and *Basili* in the East. Then in 566 the Emperor Justin II. assumed the Consulship himself, and from that time the Imperial years were denoted in such

a form as *anno II. post consulatum Mauricii*, the Consulate being usually deemed to begin on January 1 following the Emperor's accession. Thus the post-consulate reckoning acquired the same meaning as that by the years of the Sovereign, which had been used in very ancient times and which is continued in monarchical countries to the present day. But the date from which these Regnal Years were counted was not everywhere the same. Among the Franks, for example, they began with the King's accession; but when Charles the Great became Emperor in 800, he dated from his coronation, and this practice was usually maintained by the French Kings. In Germany the Kings as a rule dated their years from their accession, but if they became Emperors from their coronation, or they might give both dates; the rule, however, is not free from exceptions. In England the year was always reckoned from the King's coronation until the death of Henry III., when, as his son was absent on crusade, a change had to be devised; and from that time the Kings' years have been counted from their accession. The Popes have almost always reckoned their years, Pontifical Years, not from their election, but from their ordination or consecration.

CYCLES OF YEARS

The first Cycle which was used for historical purposes is that of the Indiction, which consisted of fifteen years. This Cycle is computed from September 1, A.D. 312, though it is probable that it was, in fact, instituted for fiscal purposes in 297. But the date from which the first Indiction was reckoned is immaterial, for the number of the Cycle is hardly ever spoken of. All that is mentioned is the place which a particular year holds in an unspecified Cycle of fifteen years. We can only tell which that Cycle is by comparing other dates named in connection with that of the Indiction—for instance, the post-consular or regnal year, or later on the year of the Incarnation. The Indiction, therefore, is mainly useful to us now as a means of checking and correcting other chronological elements which accompany it. The date was always expressed in such a form as *prima Indictione*, not in the first year of the Indiction. When we wish to translate it into terms of years of the Christian Era, it is the rule to denote it by the year in which the greater part of it falls, so that the first Indiction is called the Indiction of 313.

This is worth remark because the fact has not

30 MEDIEVAL RECKONINGS OF TIME

always been clearly stated; indeed, a famous scholar, Kemble, treated at large upon the chronology of Anglo-Saxon charters, in which it is a normal feature, under the belief that the Indiction began in the September of what we should call the current year. Such a practice is unknown except at Genoa.

The Indiction, however, did not always start from the same day. Besides the original, Greek or Constantinopolitan, Indiction of September 1, two varying modes of reckoning were developed. One of these, called the Cæsarean or Imperial Indiction, or the Indiction of Constantine, began on September 24; this was invented probably in order to bring it into accord with the autumnal equinox. It won favour through the authority of Bede, who adopted it; and it is conveniently distinguished as the Bedan Indiction. The other is known as the Roman or Pontifical Indiction; this began on December 25, or perhaps sometimes on January 1, and was no doubt devised in order to make the Indiction correspond with the common reckoning of the year. Of these three varieties the Greek Indiction was regularly employed by the Popes until 1087; after this the usage fluctuates until under Alexander III. (1159-1181) the Bedan Indiction of September 24 became estab-

lished. From Italy the Indiction passed into the Imperial chancery with the coronation of Charles the Great in 800; first the Greek Indiction, and then alternatively the other two modes of reckoning.

In England the Indiction of Bede was usual, but the simpler computation from Christmas gradually came to be employed. Outside the Papal and Imperial chanceries the Indiction was mainly an ecclesiastical system. It may be found in charters for churches, and historians occasionally make mention of it; but it passed more and more out of general use. Only the notaries public who received their authority from the Pope or Emperor, and who delighted to amplify their certificates in the most precise fashion, never omitted to insert the Indiction in their official Acts.

Other Cycles which were employed were invented for the technical purpose of ascertaining the date of Easter, or more exactly of finding the fourteenth day of the Moon of the Vernal Equinox. In what relation Easter stood to that day had been a subject of long dispute, but it was nearly settled by the fifth or sixth century; and the definition which became accepted was that Easter Day was the Sunday next following the Full Moon on or next after March 21.

EASTER TABLES

In order to find the term from which Easter—the governing date in the Christian Year—should be computed, it was sought to reconcile the discordant elements furnished by the Solar Year of $365\frac{1}{4}$ days, the Lunar Year of 354 days, and the unrelated march of the Days of the Week, by constructing a Cycle, or series of years, at the end of which the elements would start afresh as they were at the beginning. To adjust the Week Days to the Solar Year was an easy matter. If the Year had consisted of just 365 days, the same Week Day would be the first day of every seventh year; but the insertion of a day in Leap Year makes it necessary to multiply the number by four, and thus we get the Solar Cycle of 28 years.

To adjust this Cycle to the phenomena of the Moon was much more complicated. At Rome it was reckoned in the third century that a Cycle of 84 years—that is, of three Solar Cycles—would form a period at the end of which the elements would again be in harmony; but in fact, while it, of course, brought the Year and the Day of the Week into agreement, it involved an error of a day and a quarter in the calculation of the Moon. It was

such a Cycle that passed into use in the Celtic Church and led to a long controversy with those who adopted a more scientific system, which was not appeased until some time after the Council of Whitby in 664.

Evidently in order to attain anything like accuracy it was necessary also to take account of the periods of revolution of the Moon. Now it had been calculated in ancient Athens that 235 Lunar Months were almost exactly equal to 228 Solar Months, or 19 years, at the end of which the two systems were again in agreement. This Lunar Cycle was adopted in the East as one of the determining data for the reckoning of Easter. The Alexandrians constructed a Great Cycle, or *Annus Magnus* of 532 years, the product of the 28 years of the Solar multiplied by the 19 years of the Lunar Cycle. This reconciled the three discordant elements: when the Cycle ended, the same day of the month, the same day of the week, and the same phase of the moon occurred as at its beginning. It should be observed that, when this system was finally established, the Lunar Cycle was computed from two different points of departure. That which was known as the Lunar Cycle—the Greek reckoning—started three years later than that which became accepted in the West. ~~The latter~~

34 MEDIEVAL RECKONINGS OF TIME

is called the Cycle of 19 years, *circulus decem-novennalis*, or the Golden Number, and the number of any year in it is likewise spoken of as the Golden Number.

A table based on the period of 532 years was constructed in 457 by Victorius of Aquitaine, and was long used in Italy and longer still in Gaul. It was superseded by a new Cycle of nineteen years drawn up by Dionysius Exiguus in 525, but perhaps not brought into currency until more than a hundred years later. To this we shall return when we come to consider the origin of the Year of the Incarnation.

Although the Cycle of 84 years was superseded by a more accurate system introduced from Alexandria, one feature in it continued a permanent element in the chronological system of the West. This feature is the arrangement of the Lunar Years. A Lunar Year, we have seen, consists of 354 days. It was divided into twelve Lunar Months, or Lunations, arranged alternately as months of 30 and of 29 days (known respectively as Full and Hollow Months, and named from the month in the Solar Year in which they ended). Now, as the Lunar Year is eleven days shorter than a Solar Year, the Moon is eleven days older at the end of the year than it was at the beginning. The age

of the Moon on January 1 is called the Epacts (*adiectioes lunæ*). If the number is 1 in a given year, it is 12 in the next and 23 in the third. The year was reckoned for this purpose as beginning on September 1 preceding the current year. When the number reached 30, this number was deducted from the Epacts and an additional or Embolismal Month of 30 days was intercalated in the Year: this month was inserted in seven years of the Cycle of nineteen. In Leap Year also an intercalated or Embolismal Day was added. But when the Cycle was completed, the Lunar series was found to be one day in advance of the Solar; so the Moon was assumed to skip a day—this was called the *saltus lunæ*—in other words, a month in the last year of the Cycle was diminished by one day. This skip was commonly made in November, but sometimes, after the Alexandrian practice, in July.

It will be understood that the Moon computed by these means is not the Moon as observed, but what is called the Calendar Moon, which may or may not agree with the true Moon. To take an example within recent memory, in 1903 the Easter tables, following the modern reformed Calendar, placed the Full Moon of the Vernal Equinox on April 11, and consequently Easter Day was

36 MEDIEVAL RECKONINGS OF TIME

kept on the 12th. But our almanacks tell us that the Moon was not full until eighteen minutes after midnight, therefore on April 12; so that, if we had followed observation instead of computation, Easter should have been kept on the 19th.

The Easter tables led primarily to the ascertaining of the Full Moon, the Paschal Term, as it was called. To find the date of the next—that is, Easter—Sunday, a series of numbers known as Concurrents was arranged to indicate the Day of the Week on March 24; these numbers, running from 1 to 7—1 being Friday, 2 Saturday, etc., and a number being omitted each Leap Year—were assigned in order to each year, and the year for this purpose was reckoned from March 1. If March 24, for instance, falls on a Sunday, the Concurrent of that year is 1 and the Sunday Letter F; March 1 is a Friday. This explains why the numbering of the Concurrents starts from that day of the week.

ERAS

We have had to say something about the elements of the Easter Cycle, because these data are not infrequently noted in chronicles and in charters; but they cannot be included among the common

reckonings of time. Two of these Cycles, however, acquired great importance because they developed into Eras; that is to say, the first year in a table intended for finding Easter came to be accepted as an Era from which years might be counted continuously for all time. For while the Cycles were constructed for practical use, and therefore started either from about the year when the compiler wrote or else from the termination of the Cycle then current, it was not unnatural that he should make tables of a more ambitious kind extending back to an earlier date, so that they might be available for reference and for historical purposes. If he did this, he would repeat the existing Cycle for periods of the past and calculate them on the same principle as that which served for the present and future. To such amplified Cycles may be traced in all probability the origin of the Spanish Era and certainly that of the Year of the Incarnation.

The Spanish Era makes its appearance among the orthodox Christians in Spain soon after the middle of the fifth century; from them it was adopted by the Arian Visigoths. At that time the old-established Easter table used at Rome was a Cycle of 84 years (or three Solar Cycles) beginning on January 1, 298. It was just about to be revised,

38 MEDIEVAL RECKONINGS OF TIME

but it is unlikely that the change became known in Spain immediately. In that country, it seems, a chronologer drew up a series of cycles to precede that of 298 and to include the presumed date of the Resurrection; and calculating thus backwards, he made his first cycle begin on January 1, 38 B.C. This theory presumes that he accidentally added in 298, which was in fact the first year of the next cycle. It is an interesting coincidence that if he had performed the same process with the Oriental cycle of Cyril of Alexandria, which was of 95 years (or five Lunar Cycles), and made the same mistake, he would have arrived at precisely the same starting-point. And the same result would have been obtained had he worked back from the earlier table of Theophilus of Alexandria, which began in 380: deducting 22 Lunar Cycles or 418 years from 380, he would have come to 38 B.C.

The Spanish Era is peculiar to the Peninsula and to the south-west parts of Gaul (Aquitaine and Languedoc), which were for a time subject to the Visigoths. It continued in use until the fourteenth, and in Portugal even until the fifteenth, century. No reckoning is easier to distinguish from all others, for the date is always given, not as *anno MCIII.*, but as *Era MCIII.* (which is equivalent

to A.D. 1065), and it is free from the confusion which is found elsewhere, since the year is invariably taken to begin with January 1.

THE CHRISTIAN YEAR

In 525 Dionysius Exiguus, a Scythian monk living in Rome, undertook to compile an Easter Table to take the place of that which was in use, but of which the Cycle would terminate in 531. That Cycle was calculated from the 153rd year of the Era of Diocletian, which began in A.D. 285—therefore from A.D. 437—and consisted of five Lunar Cycles or 95 years. In continuing it Dionysius says that he preferred not to give the years of a pagan persecutor, but chose rather to set them out from the Incarnation of Jesus Christ. Consequently he marked the year next following 247 from Diocletian, as the Year of our Lord 532. He makes no suggestion that he is inventing a new Era; he simply inserts the year calculated from one of the several slightly discrepant dates which were computed to indicate the year of our Lord's birth, and uses it to start a series of years to accompany his Easter Table. And it never, in fact, became an Era until it was employed as a chronological note in English charters late in the

seventh century, and was adopted by Bede in his "Church History of the English Race."

The Year of Grace, therefore—to use the name familiar in England—is an English invention. From England it travelled to the Continent, probably in company with St. Boniface. It was inserted in documents and annals. Afterwards it was taken up by the Frankish Kings and Emperors; and from their chancery it passed into that of the Popes, for a few years in the tenth century and normally from 1048. It was the only Era in use in the West outside Spain, and it had no serious competitor. Occasionally, no doubt, an historical writer would for special reasons give his dates from the Passion (taken as A.D. 33); or another might invent a new Era, of no merit, beginning in 22 B.C., but he would be careful to specify his date as reckoned *secundum evangelicam veritatem*. These are eccentricities which do not affect the truth of our general statement.

But if the first Year of Grace was A.D. 1, there was no common agreement as to the date in that year at which the Incarnation was assumed to have taken place. It is probable that it was originally considered to have been that of the Annunciation, on March 25, 1 B.C.; but Bede laid down that the

year began with the Nativity on December 25, 1 B.C. Both these modes of reckoning were long maintained, but before entering into particulars it will be well to mention some other dates for beginning the year which were transmitted from earlier systems.

THE BEGINNING OF THE YEAR

The Roman civil year began on January 1, and calendars could hardly begin on any other day. Hence the Golden Number and the Sunday Letter were reckoned from that date; and the years of the Spanish Era, which were connected with a calendar, always began on January 1. But Christian opinion condemned it on account of its association with pagan festivities. It was sought to convert the day by the institution of the Feast of the Circumcision; but to speak, as some writers do, of the reckoning from January 1 as the Style of the Circumcision is to invert the order of things. The revival of the study of Roman law led to the use of this reckoning in the later middle ages, and it is found occasionally in Germany from the thirteenth century; but elsewhere it is the rarest of all the modes of dating the beginning of the year. Still it is curious that everywhere the term New Year's

Day means January 1 and no other day, and popular usages have always been specially attached to it.

The Roman year had originally been reckoned from March 1. But it was for a different reason that Christian writers often spoke of March as the first month. It was because that was the month in which the Passion and Resurrection were believed to have occurred, and from which all Easter calculations proceed. In connection with this the Concurrents were changed on March 1. The date seems also to have been taken as the beginning of the year by the Franks, possibly in continuation of an old Teutonic custom which made Spring open with it. It is found in the edicts of Lombard Kings, and was used at Benevento as late as the twelfth century. But in one place only was the 1st of March always officially observed as the beginning of the year. This was at Venice, where it was maintained until the fall of the Republic in 1797.

The Roman financial year, and from it the original Indiction, began on September 1. This was rarely used in the West as a date from which to reckon the year, though it seems that in England the year was counted in the tenth and early eleventh centuries as beginning with the Bedan Indiction of September 24. The date of September 1 is

strictly a Byzantine date, usually associated with the Byzantine *annus Mundi*, which was calculated from 5509 B.C. It is scarcely found in the West, except in those parts, Lower Italy and Sicily, which continued latest under Byzantine rule.

From these three beginnings, of January 1, March 1, and September 1, we return to those which were connected with the Year of Grace. The reckoning from the presumed date of the Annunciation—that is, from March 25 preceding A.D. 1—prevailed in some parts, especially in the kingdom of Burgundy and in the North of Italy. It persisted longest at Pisa, whence it is known as the *calculus Pisanus*. The Popes used it occasionally between 1088 and 1145, but never (it is believed) before or after.

The inconvenience of this mode of reckoning was manifest, and the years of the Incarnation came to be dated, not from the Annunciation, but from the Nativity, or Christmas Day, December 25, 1 B.C.; this continued to be the established beginning of the year until at least the eleventh century. It held its ground with the Popes until 1088, with the Emperors until the second quarter of the thirteenth century, and with the Anglo-Saxon and

Norman Kings of England. The few exceptions to this rule can be accounted for by special circumstances. Even after the Popes had settled down to the Lady Day reckoning for great bulls (*privilegia*), they used Christmas for all their official correspondence; and in England, when the same change was made, the Benedictine monasteries continued to begin the year at Christmas as late as the fourteenth century.

The system by which it was supplanted was that which we know as the style of Lady Day, March 25, subsequent to the reckoning from Christmas. It was thus twelve months behind the *calculus Pisanus*. This reckoning may perhaps be traced back to the end of the tenth century. It took root at Florence, and is hence called the *calculus Florentinus*, to distinguish it from the rival system which prevailed at Pisa. The wider diffusion of this mode of reckoning is attributed, at least in part, to the influence of the Cistercians. We find it in various districts of France, but mainly as an ecclesiastical use. When the Popes finally adopted it, under Alexander III., they did so only for their most solemn documents. But in England under the Plantagenets it became the regular system: whenever we find a date specified as *secundum*

consuetudinem ecclesiæ Anglicanæ, we know that the year begins at Lady Day.

A computation not far removed from this in actual date, but the most illogical and inconvenient that could have been devised, is that from Easter. The number of the year is reckoned from the Nativity, but its initial day from the Resurrection; and as the time of Easter may vary by more than a month, the length of the year is never uniform, and if Easter falls early in one year and late in the next, the same year may include a good many days of March or April at both ends. We should notice that the Easter date was considered to include Easter Eve, and is sometimes spoken of as *a Passione*. This is not the rarely used Year of the Passion which has been mentioned earlier; it is only the day that falls within the season of the Passion.

This unhappy system came into use in the French Court from the beginning of the thirteenth century; it is known as the *mos Gallicanus*. But it never wholly supplanted the reckoning from Lady Day in the local custom of many districts of France, and it never travelled far beyond the limits of the kingdom except to places which were closely connected with it through the ruling houses

or through trading relations. Thus it became officially used in Holland and even in Cologne; but it was known as the *stylus curiæ*, and it did not supersede the popular reckoning from Christmas.

If these varieties of reckoning were at times apt to mislead people in the Middle Ages, much more have they confused modern historians and editors. Nor is the usage of a particular place or chancery decisive as to the system employed in a given document or narrative. A clerk from Bologna or Lucca might introduce the rule to which he was accustomed; or a royal document might be drawn up in a monastery which counted dates differently from the King's chancery. But these divergences were matters for the writer of documents or chronicles; the Year of Grace did not practically concern the common man. If we suppose a traveller to set out from Venice on March 1, 1245, the first day of the Venetian year, he would find himself in 1244 when he reached Florence; and if after a short stay he went on to Pisa, the year 1246 would have already begun there. Continuing his journey westward, he would find himself again in 1245 when he entered Provence, and on arriving in France before Easter (April 16) he would be

once more in 1244. This seems a bewildering tangle of dates. But, in fact, our traveller would not think of the year; he would note his movements by the month and day. If he entered the year at the beginning of his diary, it would be the year of the place where he lived, not of the places through which he passed.

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